

IN THE CLAIMS:

The status of each claim that has been introduced in the above-referenced application is identified in the ensuing listing of the claims. This listing of the claims replaces all previously submitted claims listings.

1. (Currently amended) An airway adapter configured to substantially simultaneously provide data indicative of respiratory gas flow and of a concentration of at least two substances present in respiration of an individual, comprising:
a housing with a bore formed therethrough;
a respiratory flow detection component formed in the housing and in communication with the bore;
a first respiratory detection component configured to facilitate sensing of at least a first of the at least two substances without diverting respiratory gases from the housing and comprising a detection chamber within the housing, a boundary of the detection chamber at least partially defined by at least one window; and
a second respiratory detection component disposed on at least a portion of the at least one window and comprising at least one luminescence quenching sensor configured to facilitate sensing of at least a second of the at least two substances without diverting respiratory gases from the housing.
2. (Previously presented) The airway adapter of claim 1, wherein the respiratory flow detection component comprises:
a structure within the housing for creating therein a pressure differential in respiratory gas flow;
and
first and second pressure bores formed in the housing and located so as to facilitate detection of the pressure differential.
3. (Canceled)

4. (Currently amended) The airway adapter of claim 31, wherein the boundary of the detection chamber is at least partially defined by opposed windows.

5. (Currently amended) The airway adapter of claim 31, wherein the at least one window is optically compatible so as to permit a beam of infrared radiation to traverse the detection chamber.

6. (Previously presented) The airway adapter of claim 1, wherein the first respiratory detection component is configured to facilitate measurement of at least one of CO₂, N₂O, and an anesthetic agent.

7. (Canceled)

8. (Previously presented) The airway adapter of claim 1, wherein the first respiratory detection component and the second respiratory detection component include at least one common element.

9. (Canceled)

10. (Currently amended) The airway adapter of claim 31, wherein the at least one window is formed from a polymer.

11. (Previously presented) The airway adapter of claim 10, wherein the polymer comprises a biaxially oriented polypropylene.

12. (Previously presented) The airway adapter of claim 2, wherein the structure for creating the pressure differential comprises at least one strut.

13. (Previously presented) The airway adapter of claim 12, wherein the first and second pressure bores are at least partially formed within the at least one strut.

14. (Previously presented) The airway adapter of claim 13, wherein the at least one strut comprises a restriction member with at least one surface oriented so as to substantially perpendicularly face a direction of respiratory gas flow through the housing.

15. (Previously presented) The airway adapter of claim 14, wherein the restriction member has a disk shape.

16. (Previously presented) The airway adapter of claim 14, wherein the at least one strut includes a taper oriented toward the detection chamber.

17. (Previously presented) The airway adapter of claim 13, wherein the at least one strut is diametrically disposed and longitudinally extends within the bore.

18. (Previously presented) The airway adapter of claim 17, wherein the first and second pressure bores communicate respectively with laterally spaced first and second notches formed in the at least one strut proximate a longitudinal axis of the housing.

19. (Previously presented) The airway adapter of claim 18, wherein the first and second notches are oriented substantially perpendicularly relative to a length of the at least one strut.

20. (Currently amended) The airway adapter of claim ~~31~~1, wherein the respiratory flow detection component comprises first and second pressurization ports positioned on opposite sides of the detection chamber.

21. (Currently amended) The airway adapter of claim 31, wherein the respiratory flow detection component comprises first and second pressurization ports formed in the housing on the same side of the detection chamber.

22-74 (Canceled)

75. (Currently amended) An airway adapter, comprising:
a housing with a flow passage extending therethrough;
a first window ~~in~~positioned on top of the housing for facilitating luminescence quenching measurements of at least one substance within the flow passage;
a luminescable material disposed in communication with the flow passage and adjacent the first window; and
a pair of second windows positioned ~~in~~on sides of the housing on opposite sides of the flow passage for facilitating infrared measurements of at least another substance within the flow passage.

76. (Previously presented) The airway adapter of claim 75, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

77. (Canceled)

78. (Canceled)

79. (Previously presented) The airway adapter of claim 75, wherein the housing includes a seat for receiving a complementarily configured portion of a transducer.

80. (Previously presented) The airway adapter of claim 79, wherein the seat is configured to orient a radiation source and luminescence detector toward the first window, an

infrared source toward one second window of the pair, and an infrared detection component toward another second window of the pair.

81. (Previously presented) The airway adapter of claim 75, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

82. (Currently amended) An airway adapter, comprising:
a housing including:
a flow passage extending through at least a portion of a length thereof; and
a seat for receiving a complementarily configured portion of a transducer;
a first window in the housing for facilitating luminescence quenching measurements of at least one substance in the flow passage, the seat of the housing being configured to orient a radiation source and a luminescence detector of the transducer toward the first window;
a luminescable material disposed in communication with the flow passage and adjacent the first window; and
a second window in the housing for facilitating infrared measurements of at least another substance in the flow passage, the seat of the housing being configured to orient an infrared source and an infrared detection component of the transducer toward the second window.

83. (Previously presented) The airway adapter of claim 82, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

84. (Previously presented) The airway adapter of claim 82, wherein the first window is positioned on a top of the housing.

85. (Previously presented) The airway adapter of claim 82, wherein the second window is positioned on a side of the housing.

86. (Canceled)

87. (Canceled)

88. (Previously presented) The airway adapter of claim 82, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

89-100 (Canceled)

101. (Previously presented) An airway adapter, comprising:
a housing with a flow passage extending therethrough, the housing including a seat for receiving a complementarily configured portion of a transducer;
a first window in the housing for facilitating luminescence quenching measurements of at least one substance within the flow passage, the seat being configured to orient a radiation source and luminescence detector of the transducer toward the first window;
a luminescable material disposed in communication with the flow passage and adjacent the first window; and
a pair of second windows positioned in the housing on opposite sides of the flow passage for facilitating infrared measurements of at least another substance within the flow passage, the seat being configured to orient an infrared source of the transducer toward one second window of the pair, and an infrared detection component of the transducer toward another second window of the pair.

102. (Currently amended) An airway adapter, comprising:
a housing including a flow passage extending through at least a portion of a length thereof;
a first window ~~in-positioned on top of~~ the housing for facilitating luminescence quenching measurements of at least one substance in the flow passage;

a luminescable material disposed in communication with the flow passage and adjacent the first window; and
a second window positioned on a side of the housing for facilitating infrared measurements of at least another substance in the flow passage.

103. (Canceled)

104. (New) An airway adapter configured to substantially simultaneously provide data indicative of respiratory gas flow and of a concentration of at least two substances present in respiration of an individual, comprising:

a housing with a bore formed therethrough and a detection chamber positioned along the bore;
a respiratory flow detection component formed in the housing, in communication with the bore, and comprising first and second pressurization ports positioned on opposite sides of the detection chamber;

a first respiratory detection component configured to facilitate sensing of at least a first of the at least two substances without diverting respiratory gases from the housing and comprising the detection chamber, a boundary of the detection chamber at least partially defined by at least one window; and

a second respiratory detection component comprising at least one luminescence quenching sensor configured to facilitate sensing of at least a second of the at least two substances without diverting respiratory gases from the housing.

105. (New) The airway adapter of claim 104, wherein the respiratory flow detection component comprises:

a structure within the housing for creating therein a pressure differential in respiratory gas flow;
and

first and second pressure bores formed in the housing and located so as to facilitate detection of the pressure differential.

106. (New) The airway adapter of claim 104, wherein the boundary of the detection chamber is at least partially defined by opposed windows.

107. (New) The airway adapter of claim 104, wherein the at least one window is optically compatible so as to permit a beam of infrared radiation to traverse the detection chamber.

108. (New) The airway adapter of claim 104, wherein the first respiratory detection component is configured to facilitate measurement of at least one of CO₂, N₂O, and an anesthetic agent.

109. (New) The airway adapter of claim 104, wherein the first respiratory detection component and the second respiratory detection component include at least one common element.

110. (New) The airway adapter of claim 104, wherein the at least one window is formed from a polymer.

111. (New) The airway adapter of claim 110, wherein the polymer comprises a biaxially oriented polypropylene.

112. (New) The airway adapter of claim 105, wherein the structure for creating the pressure differential comprises at least one strut.

113. (New) The airway adapter of claim 112, wherein the first and second pressure bores are at least partially formed within the at least one strut.

114. (New) The airway adapter of claim 113, wherein the at least one strut comprises a restriction member with at least one surface oriented so as to substantially perpendicularly face a direction of respiratory gas flow through the housing.

115. (New) The airway adapter of claim 114, wherein the restriction member has a disk shape.

116. (New) The airway adapter of claim 114, wherein the at least one strut includes a taper oriented toward the detection chamber.

117. (New) The airway adapter of claim 113, wherein the at least one strut is diametrically disposed and longitudinally extends within the bore.

118. (New) The airway adapter of claim 117, wherein the first and second pressure bores communicate respectively with laterally spaced first and second notches formed in the at least one strut proximate a longitudinal axis of the housing.

119. (New) The airway adapter of claim 118, wherein the first and second notches are oriented substantially perpendicularly relative to a length of the at least one strut.

120. (New) The airway adapter of claim 104, wherein the respiratory flow detection component comprises first and second pressurization ports positioned on opposite sides of the detection chamber.

121. (New) The airway adapter of claim 104, wherein the respiratory flow detection component comprises first and second pressurization ports formed in the housing on the same side of the detection chamber.

122. (New) The airway adapter of claim 101, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

123. (New) The airway adapter of claim 101, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

124. (New) The airway adapter of claim 102, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

125. (New) The airway adapter of claim 102, further comprising:
a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.